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ABSTRACT

A pilot study (using the case study, or field research format) examined the acquisition of behaviors in infants who are read to and with on a consistent basis from their first day of life through the first year. Three parent/infant teams participated in a year-long course which consisted of reading "familiar" books to the infants, beginning with their day of birth. As the infant began to demonstrate an understanding of the relationship of the parent's voice and repetitive language with that of the familiar book, parents began to add new books to the reading sessions, thereby increasing the child's listening library. The parents logged the reading and attitudinal behaviors exhibited by the infants, and at monthly group meetings reading/listening interactions were video-taped. Data was categorized into specific behavior characteristics of the affective, visual, tactile/motor, and verbal modes. Results of this study verify that infants in the first months of life exhibit signs of pleasure and security in positive reading situations. They also acquire reading-like behaviors, and their first words reflect their listening vocabulary. (General guidelines for the parents, a list of behaviors to chart, collectively charted behaviors for the infants in this study, a chart of age span levels, and 16 references are appended.) (MM)

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READING BEHAVIOR IN INFANCY: DEVELOPMENTAL AND ATTITUDINAL IMPLICATIONS

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ABSTRACT

READING BEHAVIOR IN INFANCY: DEVELOPMENTAL AND ATTITUDINAL IMPLICATIONS

Children who are early readers have recently been the target of many research studies. One coorelate to reading acquisition that consistently surfaces is the importance of the parent/child reading experience as a foundation for the successful emergence into the world of literacy. It is commonly accepted that much of the successful readers maturity with print is acquired prior to formal school instruction. These researchers attempted to chart the acquisition of language development, attitude development, and reading behaviors of infants from birth to 12-15 months of age who were involved in daily reading sessions with their parent/s for one year. The resultant behaviors were charted against the infants in a similar study and against a control group of infants who were read to in an unstructured, inconsistent manner. The results verify that infants in the first months of life, can and do exhibit signs of pleasure and security in positive reading situations. Further, they acquire important reading-like behaviors, and their first words reflect their listening vocabulary.

READING BEHAVIOR IN INFANCY: DEVELOPMENTAL AND ATTITUDINAL IMPLICATIONS

Rudolph Flesch (1955), in his article entitled, "Why Johnny Can't Read", proposed the theory that children who experience reading difficulty in school might be children who do not understand the phonetic generalizations of the language. On the other side of the issue, proponents of the "whole word approach" to reading instruction propose that children should be taught to read whole words at sight. A basis for this theory rests in the knowledge that our language is made up of many irregularities and inconsistencies. Also, heavy instruction in phonics appears to cause a slowing in reading rate and an over-analytic pronunciation technique.

Theorists from both fields do agree that many children are turned off to reading. Unfortunately, many of these children feel that reading is something to do only when it is necessary to gain knowledge or find answers to questions. Many young children simply do not have the prior knowledge and experiences that are necessary to construct meaning from the clues in the stories and informative text that were provided by the author. Also, it appears that many beginning readers do not understand the conventions and mechanics of print (Clay, 1972; 1979; Ehri, 1975). Further, it is probable that formal reading instruction is so overly skills oriented and "part and parcelled" that it does not resemble the reading act enough for many children to transfer the parts into a global whole.

Perhaps one effective solution to the above problems can be found in the home. Children who are early readers have been the target of many research studies of late (Greaney, 1986; Jenson; 1985; Kontos, 1986; Mason, 1980; and Morrow, 1983). Factors that consistently appear to correlate highly with this ability are that the parents value and enjoy reading, serving as role models for their children; that books, magazines, newspapers, and other reading materials are found in the home; that the children own their own books; that these children are read to on a consistent basis; and that these children are given numerous experiences with opportunities to develop their language usage ability by talking about those experiences.

Questions that need answering are: At what age should parents begin to provide reading experiences with and for their children? What should be the focus of these experiences? What are the attitudinal ramifications of early reading experiences to the enjoyment of reading (Werner and Strother, 1987)? What benefit to the child's success in school, more importantly, ability to learn to read, is an infancy reading program? While not all of the above questions can be answered within the scope of this study, a need to begin to find answers for them is apparent.

Literature that deals with young children and their conceptions of print predominantly centers around children who are three years of age or older. Yet, surprisingly, the findings of the majority of these studies of early readers support the claim that many three year old children already possess fairly

sophisticated print awareness (Kontos, 1986; Sava, 1987). It is surprising, then, to discover that the number of studies dealing with print related experiences of infants is so sparse. At the time the present study was undertaken, the literature available that dealt specifically with reading and infancy was based on a few case studies.

For example: Baghban (1984) attempted to study the language development of children through reading and writing experiences from infancy by studying her own child, Giti. Giti was nine months old when she had her first experience with reading. By one year of age she was able to handle a book with proficiency. Meaningful verbalization, as applied to reading, followed quickly, characterized by fitting words in her speaking vocabulary to her books.

A second study of reading and infancy involved a case study of a baby whose initial reading experience began on the day of birth and proceeded consistently over the first year of life (Doake, 1986). The intent of reading to Raja was merely to share the love of reading of both parents with their infant. Raja, almost immediately (within two months) shared that enjoyment.

Another study of a single child's behavior during a parental reading program for infants focused on an eight month old infant (Ninio and Bruner, 1987). This study was, again, in conjunction with an attempt to understand the relationship of language acquisition and print.

Finally, the study most responsible for the evolvement of the present study was a series of case studies by Lamme and Packer (1986). These researchers video-taped thirteen middle class mothers reading to their infants (5 males, 8 females; initially 3 months to 81/2 months old). These mother-infant pairs were studied weekly for a four month period. From transcriptions of the video-tapings, and from interviews and observations of 20 other mother-infant pairs, 19 behaviors were categorized into four domains: visual, tactile, verbal, and affective. A comparison of the Lamme and Packer infants with the infants of this study will be discussed.

In our review of the literature, it became apparent that the case study would be the appropriate form of design to use to fulfill our endeavors. As our intent is to add to the theory and understanding of early acquisition of reading behaviors and attitudes, we are attempting to "make sense out of an ongoing process that cannot be predicted in advance..." (Babbie, 1979, p. 205) due to a lack of an adequate amount of informative literature. The case study, or field research format, is "especially appropriate to the study of those topics for which attitudes and behaviors can best be understood within their natural setting" (Babbie, 1979, p. 206). Crucial acquistion of behaviors in infancy certainly meets that criteria. Even though case studies typically involve one or only a few subjects and are, therefore, limited in their generalizability, a large number of such studies tend to support and validate, or refute those generalizations (Baghban, 1984). In the present situation, we

are re-evaluating, supporting, augmenting, and validating existing data based on a longitudinal study of the infants over one year period of time.

The purpose of this study, then, is to further knowledge of the kinds of behaviors exhibited by infants who are read to and with on a consistent basis from their first day of life through the first year. Accumulated data is categorized into the following areas: types of reading material used successfully; reading behaviors exhibited and chronological age at which each occurs; language skill development and communicative efforts of the infants; and attitudinal indications of the reading sessions. AT NO TIME SHOULD THE FINDINGS OF THIS STUDY BE CONSTRUED TO SUPPORT THE TENET THAT INFANTS SHOULD BE FORMALLY TAUGHT TO READ.

PROCEDURE

This research project officially began March, 1986. At that time one mother/father-infant team enrolled. The age of the female infant was 3 months. Three other mothers enrolled in the project prior to the births of their babies. Two of these mothers withdrew after the first meeting; the remaining mother is currently participating in the study with her now 10 1/2 month old son. After the first meeting, two more mother-infant pairs enrolled. Of these, one mother-infant pair withdrew within two months; the other mother and her 8 week old daughter have continued throughout the remainder of this study. There has been a 50% drop-out rate of participation for this study, attributed to the demands of the routine over the course of one year.

The methodology for this study consisted of the reading of books that were to become "familiar" to the infants beginning

with their day of birth (where appropriate). As the infant began to demonstrate an understanding of the relationship of the parent's voice and repetitive language with that of the familiar book, the parents began to add new books to the reading sessions, thereby increasing the child's listening library. The logging of reading and attitudinal behaviors that were exhibited by the infants enrolled in this project, as well as the chronological age that each behavior occurred was the task of the parents. The parents were given general guidelines of the kinds of behaviors to watch for, as well as the kinds of environments and conditions that should prevail for the reading sessions (Appendix A). Each set of parents was provided with photographic film for taking slides as the new behaviors evolved. Monthly group meetings for support, interpretation, and further guidelines were scheduled and attended for the year. These meetings were attended by at least one of these researchers, at least one of the parents, and the infants. Reading/listening interactions were video-taped at these meetings.

From the logs, video-tapes, and parental input, these researchers have charted a developmental and attitudinal checklist of reading behaviors across averaged chronological age spans (Appendix B). Further, we have compared the language development and reading behavior development of the infants enrolled in this project with a control group of infants that were matched by family size, sibling order, level of parental education, and parental attitude towards the importance of reading (Appendix C). The main difference in the treatment group

and the control group is the lack of consistent, purposeful reading-to-the-infant sessions on the part of the parents in the control group.

A description of the father/mother-infant participants currently enrolled in this study follows. Also included is a description of the mother/father-infant pairs that comprise the control group.

For the study pairs, all three are upper-middle class, two-parent families where at least one of the parents has a college education. Two of the infants are the only child born to the parents, the third infant is the third child out of three. One of the infants was read to by both parents while the other two were read to predominantly by the mother. All of the parents enrolled themselves and their child in the project because of the desire to share an enjoyment of reading with their child, and a desire to learn how to help their infant enter the world of literacy successfully.

One mother-infant pair and one father-infant pair comprise the control group. The infants are from single child, two-parent, upper-middle class families where at least one of the parents has a college education. Each infant has had exposure to reading sessions with a parent. One infant has been read to by both parents; the other predominantly by the mother.

FINDINGS AND DISCUSSION

In keeping with the four primary domains already described by Lamme and Packer (1986), we have categorized our data into specific behavior characteristics of the affective, visual, tactile/motor,* and verbal modes. However, what follows is a discussion of chronological age spans for each of the subjects of the study.

I. AFFECTIVE DOMAIN: (See Appendix B for charted behaviors)

A. 0 - 3 Months

All of the infants were content to sit and listen to the reading. The parents established a sense of security that could be associated with the sessions through holding and cuddling the infants on their lap. Attention spans were very short, ranging from several seconds to three minutes.

B. 3 - 6 Months

Two of the infants associated reading with security/pleasure through such behaviors as gently stroking, patting the mother's arm, or holding the mother's finger during the reading session. One infant, at 4 months, associated books with pleasure during a particularly unpleasant situation. (Infant A began crying during a shot at the doctor's office.

*Since certain infant behaviors extended beyond merely tactile displays, we have augmented that category by including motor facility behaviors.

Remembering a similar incident with the Doake (1986) infant, her mother quickly began reciting Infant A's favorite book. Immediately the infant stopped crying and focused attention on the mother's recitation.) By 4 months all infants overtly demonstrated a pleasure in being read to. At 6 months two of the infants displayed a preference for certain books, types of books, and pages within the books. Infant B was partial to animal stories and stories about babies; Infant A showed a preference for a book about herself written by her mother; Infant C enjoyed the activity-based books such as, Pat the Bunny(19). Attention spans during this segment ranged from ten to twenty-three minutes before the infant signaled enough.

C. 6 - 9 Months

Two infants began to anticipate the story line through tactile/motor, verbal, and affective behaviors that demonstrated that they knew what was going to happen next. At 6 months one infant began to self-select books as playthings. All three infants, at around 81/2 months, began to initiate the reading sessions and clearly indicated a preference for the types of books they wanted to have read. One child chose to hear rhyming books while the other children chose books that required active involvement. The general attention span of this period ranged from six minutes to forty-five minutes.

D. 9 - 12 Months

Infant B began not only to anticipate the story line, but also began to play-read as well. Infant C began to initiate reading sessions. All three infants began to give up other activities in order to be read to by the age of 10 months. With regards to attention span, there appears to be a significant lag on the part of all three infants. This lag is possibly the result of the new mobility characteristic of this age. It was noticed that new developmental trends in reading behavior acquisition also began to decrease in quantity. Parents reported that their infants preferred to explore their surroundings as opposed to sitting and listening for long periods of time.

E. 12 - 15 Months

This period was characterized, affectively, by a more independent approach to reading. Infant A was found play-reading a book at 14 months of age. Pleasure in reading was still evident, but no new overt signs were manifested except that Infant A began to use books to initiate reading sessions as a way of gaining her mother's attention. Attention spans, overall, did increase over the lull period of 9 - 12 months. These spans range from twenty to twenty-five minutes.

II. VISUAL DOMAIN: (Appendix B)

A. 0 -3 Months

All three infants were able to focus on the pictures in the books. It is not clear as to whether or not, at any time, the "staring at the pictures" was associated with the reading behavior of the parent.

B. 3 - 6 Months

All three infants showed a definite preference for colorful illustrations over black and white. Infant A seemed to follow left-to-right textual progression with her eyes; however, it is cautioned at this point that the behavior was probably the result of the consistent pointing-to-the-print of the mother. The apparent inability of Infant B to follow a left-to-right textual progression may, in part, be attributable to the ineffective pointing strategy of the mother. Infant C's mother didn't point textually at all.

C. 6 - 9 Months

All three infants were able to follow the parent's pointing cues. These cues now include the pointing-to-the picture cues as well as the lining of the text.

D. 9 - 12 Months

All three infants began to be able to follow a character in the pictures from the beginning to the end of the story. Infant B was especially adept at this behavior, for her mother chose activity books written around a central character with which the child

interacted throughout the story. At 11 months, Infant B began to follow the text in a left-to-right progression.

E. 12 - 15 Months

We found no new chartable visual behaviors during this span. However, there was a natural refining of visual awareness that is associated with the stages of visual maturation of infants.

III. TACTILE/MOTOR DOMAIN: (Appendix B)

A. 0 - 3 Months

All infants exhibited scratching, patting, tapping, rubbing, and book grabbing behaviors that progressed from random arm/hand movements to more directed efforts. Infant A began responding behaviorally (smiling, looking at the mother/reader, etc.) to the voice changes of the reader at around 31/2 months. All three infants also signaled their readiness for the reading sessions to end by looking away from the book without distraction. If the book reading session continued, the infants began to fuss. If the session ended, the infants left the session content.

B. 3 - 6 Months

At this stage all three infants began chewing the books. all three tried to turn the pages, initially, through uncoordinated, random, slapping behavior. At this point the parents found that, by holding down all pages except one, the infants could eventually "push" the page. Infant B began being actively

involved in the reading by poking her finger through the hole in the Pat the Bunny book. Again, no books of this type were read to Infant A.

C. 6 - 9 Months

Page turning behaviors became proficient during this period. According to video-taped observations, and conversations with the parents, Infant A and infant B always turned pages from left-to-right. Infant C, however, quite often turned from right-to-left. Due to the developmental stage of the infants and the consequent new mobility, the behaviors used by all three of the infants to signal the end of the reading session were the arching of the back, squirming, and attempts to leave the setting. All three infants were able to both open and close the book. Infant B began self-selecting books by choosing a book and taking it to her mother. She also exhibited her pleasure of favorite parts by clapping. Infant C began to actively participate in book actions during reading.

D. 9 - 12 Months

By 12 months of age, Infant A began pointing to objects in the book and expected her mother to respond. However, Infant B and Infant C began to point to the

objects on the page and label them themselves. Infants A and C began to select, independently, the books they wanted to hear. Taking the book to the mother initiated the session.

E. 12 - 15 Months

Infant A was able to place a book right-side-up and began to imitate the pointing, labeling behavior of the parent. Infant B demonstrated no new tactile behaviors during this span.

IV. VERBAL DOMAIN: (Appendix B)

A. 0 - 3 Months

Infants A and C babbled during the reading sessions. This babbling was characteristically random in nature, and apparently more associated with feelings of pleasure and security.

B. 3 - 6 Months

Infant B began to babble during the reading sessions.

C. 6 - 9 Months

Infant A began to predict actions in her books and made noises and gestures to accompany the story that eventually turned into imitative noises. These gestures and noises also seemed to signal an understanding of what was to happen next in the story.

D. 9 - 12 Months

Infants B and C began to exhibit the above behaviors. Infant B uttered her first words during the reading

sessions, reflecting the reading vocabulary. At 10 months, Infant C's speaking vocabulary reflected words from the reading sessions and from his personal experiences. (His mother chose books to parallel his life experiences.)

E. 12 - 15 Months

Infant A began to name things in her books, and to chime in on the rhymes. Her first words were a reflection of her reading vocabulary. An important note at this point is that not only did the speaking vocabularies of the infants reflect their reading/listening vocabularies, but the infants also exhibited conceptual understanding of these words by being able to use them correctly outside of the reading situation.

In surveying the overall analysis of the data charted, several interesting trends emerge. For example, it seems fitting that, for the targeted age span of this study, the number of observable behaviors in each of the four domains is indicative of the developmental aspects of infancy: tactile/motor being, by far, the most inclusive, followed by affective, and then verbal and visual. This information is important in that, in order to be sensitive to the infant's responsiveness to the reading sessions, the reader should be aware of the developmental and maturational implications of overt behaviors. Early behaviors are mainly random arm/eye movements and babbling which mature into more calculated movements of the same variety. During the 6 - 12 month period of this study, enhanced mobility in movement

began to dominate the reading sessions. The infants used their bodies to become actively involved in the stories, to signal the end of the reading sessions, and to take over many of the mechanics of using a book such as opening and closing it, page turning, etc.

Another interesting bit of analysis is concerned with the differences in the development of certain key behaviors among the infants. In compiling information based on the observations of the mothers' "reading-to-the infant" behaviors during video-taping sessions, listening to what they had to say, and in noting the behaviors they logged, these differences were quite understandable - even to be expected. Illustrative of this point is Infant A's maturity with print and book handling reflecting the fact that her mother's main emphasis had been on building for an understanding of print and books. The books chosen for her were mainly story books. The reading sessions were characterized by pointing methodically to the words during reading, and then pointing to the illustrations during the discussions of the page. Infant A's mother labeled the parts of the book, discussed the author and the illustrator, and displayed large printed signs around the home so that, if Infant A showed an interest, the mother could provide a label for where the infant pointed. Infant A's long attention span for book reading reflects the patient, positive, secure environment that her mother built around the reading sessions.

Infant B, on the other hand, enjoyed books that allowed her to participate actively. Her mother chose books with the goal in

mind of helping her to develop an interest in and an enjoyment of reading. Infant B's mother became very energetically involved in the reading, even during the time she spent pointing to the words and turning the pages.

Infant C was not as sophisticated in his book handling behaviors as were Infants A and B at the same age. There was not as concentrated an effort and consistency on the part of his mother as there had been for the other two, partially due to the fact that his mother worked part time while the mothers of Infants A and B did not. With regards to book handling behaviors, again Infant C's mother did not line the print, nor did she consistently structure the book reading sessions. Her main emphasis has been on building for conceptual understanding and language.

It is tempting, in light of the above discussion, to propose the theory that, not only does parental involvement set the stage for the acquisition of book reading behaviors, but it also influences the pattern and rate of growth for those behaviors within the constraints of maturation. Unfortunately, three case studies do not form the basis from which to generate a theory. More research into the correlation of parental expectations and consequent reading-to-the-infant behaviors with resultant reading behavior acquisition is necessary. However, there does appear to be a relationship between the parental book-reading behaviors and expectations and the acquistion of those behaviors across various age spans.

Where certain behaviors were intentionally modeled, they appeared earlier than did those behaviors which developed more as a matter of routine.

In an attempt to add to or support the existing literature concerning reading behaviors in infancy, the necessity of trying to fit our findings into those of Lamme and Packer was the logical progression. A comparative discussion of the two studies will again be categorized around the four prescribed domains. Only the points of departure of the two studies will be addressed.

I. AFFECTIVE DOMAIN

According to Lamme and Packer, the infants began to anticipate the story line between 9 and 12 months. However, two of the three infants in our study began to anticipate story line between the earlier period of 6 - 9 months. Also, two of the infants of this study, displayed a preference for a particular book or picture at a time span prior to those of the Lamme and Packer infants. Behaviors that were apparent through this study that were not discussed in the report of the Lamme and Packer study are: all of our infants initiated reading sessions and were willing to give up other activities in order to participate in a reading session; and the attention spans of our infants were significantly longer over all age groups.

II. VISUAL DOMAIN

Although most of the charted behaviors were consistent with those of the Lamme and Packer infants, our infants were delayed in two primary behaviors: following the parent's pointing cues, and recognizing the front from the back of the book. The pointing cues used by mothers in the Lamme and Packer study appeared to be predominantly for calling attention to illustrations. In our study, mothers combined pointing to the illustrations with pointing to the print, on occasion. With regards to front and back of the book recognition, even though our parents modeled and talked about this concept, none of infants acquired an applicable understanding of it.

III. TACTILE/MOTOR DOMAIN

Basically our babies attempted to turn pages very early and, consequently, became page turners earlier than did the Lamme and Packer infants. Further, two of our infants consistently turned pages in a left-to-right sequence. Infant A became so adept at page-turning that, during times of independent play-reading, she would turn left-to-right for the "reading" of the book, and then turn in the appropriate direction to find her favorite pages. Our babies also became proficient in opening and closing their books. However, our infants were unable to place a book right

side up. Perhaps due to the fact that two of our parents specifically chose activity-based books, two of our infants imitated book actions much earlier. This includes imitating the pointing and labeling behaviors of the parent. Finally, the behavior that signals an end of the enjoyment of the reading session tended to begin at a much earlier age for our infants. In other words, the period of decreased attention for our infants fell between 6 and 12 months of age, attributable to increased mobility. At around 12 to 13 months, the infants began to re-exhibit a desire to participate in the reading sessions as well as engaging in independent play-reading sessions.

IV. VERBAL DOMAIN

The key factor that needs clarifying with regards to verbalization is that the speaking vocabularies of the infants in our study reflect heavily their reading/ listening vocabularies. As a matter of fact, the first words of one of our infants were uttered during, and in response to, reading sessions.

In retrospect, although the age span labels for the Lamme and Packer study were appropriate for their findings, we felt a need to modify some of the labels in an attempt to more adequately describe our findings. We propose that the span from birth to 3 months be labeled as Random Book Awareness, from 3-6 months labeled as Random Book Involvement, 6-9 months as Mature Book

Involvement, 9-12 months as active Book Reading, and 12-15 months as Joint Book Reading.

After studying the data collected, it would appear that our infant reading study was very successful based on the outcoming reading behaviors and attitudes of our infants. The majority of the reading behaviors acquired were consistent with, or slightly earlier than, those of the Lamme and Packer infants. However, realistically, the earlier behaviors are probably due, in part, to the fact that our infants were younger when the project was initiated. Also, before making any final judgements concerning the effectiveness of our treatement, we must compare our infants to a matched group of infants who were not part of that treatment. Therefore, two infants, aged 13 months, were selected on the basis of similarities to the study group. The procedure of this comparison consisted of the video-taping of a parent-infant reading session. We then charted the behaviors exhibited by these infants from the video-taping and from the conversations of the parents. We found that the control infants, while possessing the motor ability to handle the books, lacked the maturity, conceptual understanding, and ability to attend that the infants of this research project has acquired. In addtion, the reading motor behaviors of the control infants were random. (Appendix B) Although we realize the unfamiliar environment must be considered, we do not feel the effects were totally responsible for the absence of behaviors that were characteristic of the infants of this study.

SUMMARY AND CONCLUSIONS

It would appear that intentional, consistent, informed

parental reading to infants, beginning at birth and continuing through the first year of life, has a dramatic effect on the development of reading-like behaviors, language development, and positive attitudes towards reading in those infants. However, in order to assure positive reading behaviors and attitudinal development, it is imperative that the parent be sensitive to the infant's signals of readiness and cooperation. Inherent in this is a sensitivity to behaviors that signal when the infant has had enough, an awareness of the times most suitable to the infant's daily routine, and a receptiveness to the reading sessions in general. Also imperative is the realization by the parent that infant reading sessions should not be characterized by formally attempting to "teach" the infant to read (Werner and Strother, 1987). Rather, the parent is laying the foundation for the infant's emergence into the world of literacy.

APPENDIX A

READING BEHAVIORS IN INFANTS

GENERAL GUIDELINES

READING BEHAVIOR IN INFANTS

PROJECT I

Parental Tasks:

1. Attend monthly group meetings for purposes of support, sharing, and interpreting infant behaviors.

2. Provide your infant with a good role model for reading. Let your infant see you reading and enjoying it.

3. Try to capture the various phases of behavior on film.

4. DONT'T PUSH YOUR CHILD OR YOURSELF!

5. Keep your chart of the reading sessions and behaviors as accurately as possible.

6. Start the first reading session on the day of birth, if possible.

7. Vary the readers sometimes - mom,dad, grandparents.

Procedures:

1. Select two books that are colorful, simple, rhythmic, repetitive, predictable, and large. Since these books will be used repeatedly, you may want to put clear contact paper on the pages.

2. Begin reading in short periods and continue to build reading time as your child allows. Never force the situation. Don't feel compelled to "finish the book".

3. Read to your baby in situations that are associated with warmth and security:

   a. As you are holding your baby.
   b. At feeding time.
   c. At bath time.
   d. Before bedtime.
   e. Any time that you are relaxed and calm.

4. Don't preschedule reading times. It is better to read when you aren't in a hurry and won't be side-tracked. Keep an accurate log of the number of times you spend in the reading process each day, as well as the time limits for each setting. Except to see the span increase over the days and weeks and months ahead.

5. When you begin starting new books, do it slowly and read only as your baby allows. If he/she shows signs of agitation with the new book, put it down and go back to a familiar book. Try to reintroduce the new book again that day or the next day. With some books, infants need small doses at a time before these become familiar and acceptable.

6. Don't try to introduce a new book until your infant shows signs of recognizing the familiar books.

BEHAVIORS TO CHART

1. Time spent in each reading session .

2. Age at which the child no longer exhibits 'startled' behavior at the turning of the book pages.

3. Any distinguishing behavior of the infant during the reading session.

4. At what age the infant first pays attention to the book, page, or the reader's voice during reading session.

5. Recognition of familiar pictures, words, books, etc. Log the age of the infant for each of these.

6. Note any increase in attention span at each setting.

7. The age at which the infant begins to exhibit reading behaviors - turning pages, self selecting of books, recognizing the top/bottom of the book, recognizing the top/bottom of the page,applying the rules of left-right directionality for the pages and for the lines of print, demonstrating an interest in the words, etc.

8. Note any anticipatory behavior such as laughing, pointing, predicting, etc.

9. Chart any attitude and interest in reading behaviors the infant exhibits. Is reading used successfully as a comfort, a treat, etc.?

10. The number of new books added monthly. Be sure to keep a list of complete biographical data in the order in which the child is introduced to each book. Also, record behavior and attitude towards the new book.

11. Age at which the infant can identify the books by name as well as by pictures.

12. Age at which the infant begins to imitate familiar sounds/ words in the books.

13. As the child gets older, log the number of minutes/ hours the child watches TV as opposed to the number of minutes/hours the child spends in being read to or exhibiting reading behaviors.

APPENDIX B

COLLECTIVELY CHARTED BEHAVIORS

FOR

INFANTS IN THIS STUDY

APPENDIX B

I. Affective Behaviors	Months 0-3	3-6	6-9	9-12	12-15
A. Content to sit/ listen	*ABC				
B. Associates Reading with security/ pleasure by stroking, patting or holding mother's finger		AB			
C. Anticipates story line with smiles, gestures			AC	B	
D. Associates books with pleasure during a stressful time	A				
E. Attention span		A (2 min) B (1 min)	A (45 min) B (12 min) C (6 min)	A (lull) B (lull) C (lull)	A (25 min) B (20 min)
F. Independently selects books as playthings			AC	B	
G. Initiates reading session			ABC		
H. Actively begins to show pleasure in reading		ABC			
I. Displays preference for book or picture		AB	C		
J. Gives up other activities to listen to story				ABC	
K. Best times to read	A=After bath B=Mid-Afternoon C=before nap/bed				

* ABC - Descriptors of studied infants

	0-3	3-6	6-9	9-12	12-15
II. Visual Behaviors					
A. Stares at pictures in book	ABC				
B. Prefers color to black & white pictures		ABC			
C. Follows parents' pointing cues			ABC		
D. Follows a character in pictures from beginning to end				ABC	
E. Follows left to right progression with eyes				ABC	
F. Can tell front from back of book	This was modeled, but none could do it yet.				
III. Tactile/Motor Behaviors					
A. Scratches, pats, taps, rubs book	B	AC			
B. Random arm movement	ABC				
C. Puts book in mouth		ABC			
D. Attempts to turn page			ABC		
E. Active Participant performs book actions		B	C (few books of this type were read to A)		
F. Responds to voice changes/routines		A	C		
G. Places book right side up					A
H. Turns pages (if adult sets the stage for same)		AB	C (right to left)		
I. Looks away from book without distraction, signaling end of enjoyment	ABC				
J. Arches back, squirms, signaling end of enjoyment		ABC			
K. Points to things in books & expects adult response	BC (we suspect ineffective pointing modeled by adult)			A	
L. Opens/closes book		ABC			
M. Self selects book for reading			ABC		

	0-3	3-6	6-9	9-12	12-15
N. Imitates pointing/ labeling behavior of parent				BC	A
O. Knows to turn pages from left to right		ABC			
IV. Verbal Behavior					
A. Predicts actions in book & makes noises to accompany story				BC	
B. Chimes in with babbling or makes animal noises to accompany story		B	AC		
C. Anticipates story line with noises that show knowledge of what will happen next			A	BC	
D. Names things in book				BC	A
E. Fills in names of characters, sound effects or repetitive refrains				B	A
F. First words reflect reading/listening vocabulary				BC	A

APPENDIX C

CHARTED BEHAVIORS

FOR

CONTROL INFANTS IN THIS STUDY

APPENDIX C

Control Group Behaviors Observed at 13 months.

	Infant E*	Infant F*
I. Affective Behavior		
A. Content to sit & listen		
B. Attention span	30-45 sec.	0
II. Visual Behavior		
A. Stares at pictures in book		0
B. Follows parents' pointing cue		parent did not cue
C. Follows left to right progression with eyes		
III. Tactile/Motor Behaviors		
A. Scratches, pats, taps rubs, grabs book		
B. Tries to turn page		(right to left)
C. Responds to voice changes-routines		
D. Arches back, squirms-signalling end of enjoyment		
E. Doesn't like to sit very long		
F. Points to things in book & expects adult response		
G. Opens/closes book		
H. Selects own book		
IV. Verbal Behavior		
A. Names things in book		(dog)
B. Fills in names of characters, sound effects, repetitive refrains		(dog)
C. First words reflect reading/listening vocabulary	(didn't say anything except dog)	verbalized, but not about book
D. Vocalization (cries, fusses, giggles, chuckles)		

*Control Infant designators

APPENDIX D

AGE SPAN LEVELS

FOR

INFANT READING STUDY

SPAN LABELS

Lamme/Packer (1986)

Receptive Book Reading	Random Book Awareness	Mature Book Involvement	Active Book Reading	Joint Book Reading
0 - 3 mos	3 - 6 mos	6 - 9 mos	9 - 12 mos	12 - 15 mos

Joyner/Ray

Random Book Awareness	Random Book Involvement	Mature Book Involvement	Active Book Reading	Joint Book Reading
0 - 3 Mos.	3 - 6 Mos.	6 - 9 Mos.	9 - 12 Mos.	12 - 15 Mos.

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